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**TRANSMITTAL LETTER**  
(General - Patent Pending)

Docket No.  
LWEP:119US

Re Application Of: Ralf Krueger

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
10/605,492	10/02/2003	Joshua L. Pritchett	24041	2872	2491

Title: **PHASE SHIFT METHOD AND APPARATUS FOR IMPLEMENTING PHASE-CONTRAST OR MODULATION-CONTRAST OBSERVATION ON MICROSCOPES**

COMMISSIONER FOR PATENTS:

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Patent Application No.: 10/605,492

Confirmation No.: 2491

Appellant: Ralf KRUEGER

For: PHASE SHIFT METHOD AND APPARATUS FOR IMPLEMENTING PHASE-  
CONTRAST OR MODULATION-CONTRAST OBSERVATION ON MICROSCOPES

Filed: October 2, 2003

TC/Art Unit: 2872

Examiner: Joshua L. PRITCHETT

Docket No.: LWEP:119US

Customer No.: 24041

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/C. Paul Maliszewski/

\_\_\_\_\_  
C. Paul Maliszewski

**REPLY BRIEF UNDER 37 C.F.R. § 41.41**

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Honorable Sir:

This Reply Brief is in response to the Examiner's Answer dated September 10, 2007 for the above referenced application.

**STATUS OF CLAIMS**

The application originally contained 7 claims. Claims 8-13 were added in a Preliminary Amendment dated February 26, 2004.

Claims 1-3 and 8-13 stand as finally rejected.

Claims 1-3 and 8-13 are the subject of this Appeal.

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether Claims 1, 12, and 13 are unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou)?
2. Whether Claims 2, 8, 9, and 11 are unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,687,052 (Wilson)?
3. Whether Claim 3 is unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,057,894 (Kobayashi)?
4. Whether Claim 10 is unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,057,894 (Kobayashi) as applied to Claim 3 above, and further in view of U.S. Patent No. 6,687,052 (Wilson)?

## **ARGUMENT**

1. Whether Claims 1, 12, and 13 are unpatentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou)?

A.) Summary of the Rejection: The Examiner stated: “Endou teaches an apparatus for implementing phase-contrast or modulation contrast observation on microscopes with the aid of a modulator (26b) arranged in each pupil plane (col.10 lines 30-31) in the observation beam path and containing at least one layer modifying the phase or amplitude (col. 10 lines 28-30) and a stop (6) arranged in the illumination beam path (Fig. 1) and a portion of at least one layer modifying the phase or amplitude is transmissive (Fig. 1). Endou further teaches the modulator are arranged on a carrier in a manner introducible into the beam path of the microscope (col. 13 lines 5-10). Endou lacks specific reference to dynamically tilting the modulator. Endou does suggest that rotation of the modulator can be required in a modulation contrast image (col. 13 lines 6-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the modulator of Endou dynamically tiltable as suggested by Endou for the purpose of allowing for modulation contrast without having to remove the modulator and replace it with another modulator.”

B) Response to Arguments in Examiner's Answer

1) Endou teaches away from a non-removable modulator

The Examiner stated: “Applicant argues Endou teaches away from not removing the modulator. The examiner interprets the teaching of rotate to be a potential alternative to the removal of the modulator. The Endou reference may focus on exchanging modulators but it also provides a teaching that a similar effect and be achieved through rotation.”

The question at hand is not whether Endou mentions a removable modulator or whether rotation is an effect means of adjusting polarity, but whether Endou teaches against a removable modulator. It is true that Endou mentions a removable modulator, but the reference is with respect to the undesirability of the removable modulator: “In observing a modulation contrast

image, unlike in observing a phase contrast image, it is necessary to rotate a pupil modulator to adjust the polarity of the contrast of the image. According to this embodiment, since the pupil modulation slider is employed, *the modulator can be easily removed from the microscope main body* and a whole unit of the modulator can be exchanged with another one.” (emphasis added) (col. 13, lines 5-8). Endou explicitly teaches that detachability is desirable, if not necessary, which is the exact opposite of the suggestion assigned by the Examiner to Endou.

2) The Examiner has applied impermissible hindsight

The Examiner argued: “In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).”

In the Final Office Action dated September 22, 2006, the Examiner stated that the motivation to modify Endou was found in Endou: “It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the modulator of Endou dynamically tiltable *as suggested by Endou...*” There is no reliance upon “knowledge which was within the level of ordinary skill at the time the claimed invention was made.” Therefore, the arguments regarding hindsight must be directed to the suggestion allegedly contained in Endou.

However, Endou does not suggest or motivate dynamically manipulating a modulator and the Examiner has failed to provide any evidence that Endou suggests a dynamically tiltable modulator. In fact, the Examiner has admitted that Endou does not teach a dynamically tiltable modulator: “Endou lacks specific reference to dynamically tilting the modulator.” (bottom page 2, top page 3 of the Final Office Action dated September 22, 2006).

The Examiner further states: “for the purpose of allowing for modulation contrast *without having to remove the modulator and replace it with another modulator.*” This is exactly opposite

of what Endou teaches, suggests, and motivates. Endou clearly teaches removing and replacing the modulator, rather than rotating the modulator: “According to this embodiment, since the pupil modulation slider is employed, *the modulator can be easily removed from the microscope main body* and a whole unit of the modulator can be exchanged with another one.” (emphasis added) (col. 13, lines 6-8). That is, Endou clearly teaches that removing and replacing the modulator is a desirable and advantageous alternative to rotating of any sort.

4) Meaning of “tilting” in the claims

The Examiner stated: ‘Applicant argues the rotating taught by Endou is not the same as the tilting claimed in the current application. The examiner interprets tilting to be a subset of rotating. Tilting means, “to move or shift as to incline” (Appellant's Brief page I I). Rotate means, “to turn about an axis or center” (Appellant's Brief page 11). As shown by the definition tilting is limited as to the axis about which the element turns to adjust the inclination of the element. The definition of rotate has no such limitation. The axis about which something is rotated may be any axis, including an axis that would adjust the inclination of the element. The appellant's modulator turns about an axis perpendicular to the optical axis as seen in appellant's Figs. 1 and 3 combined. The suggestion by the Endou to rotate may include turning about an axis perpendicular to the optical axis similar to the appellant's.’”

There is no basis, other than impermissible hindsight, for the assumption that the unspecified rotation referenced in Endou may include turning about an axis similar to Appellant's.



**CONCLUSION**

For the reasons set forth above, Appellant respectfully submits that Claims 1, 12, and 13 are patentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou).

For the reasons set forth above, Appellant respectfully submits that Claims 2, 8, 9, and 11 are patentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,687,052 (Wilson).

For the reasons set forth above, Appellant respectfully submits that Claim 3 is patentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,057,894 (Kobayashi).

For the reasons set forth above, Appellant respectfully submits that Claim 10 is patentable under 35 U.S.C. 103(a) over U.S. Patent No. 5,777,783 (Endou) in view of U.S. Patent No. 6,057,894 (Kobayashi) as applied to Claim 3 above, and further in view of U.S. Patent No. 6,687,052 (Wilson).

Accordingly, Appellant prays that this Honorable Board will reverse the Examiner's rejection of Claims 1-3 and 8-13.

Respectfully submitted,

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Dated: October 25, 2007  
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